REMARKS

By the foregoing Amendment, Claims 1, 50 and 52-57 are amended and Claim 51 is cancelled. Entry of the Amendment, and favorable consideration thereof, is earnestly requested. Claim 51 being cancelled herein, and Claims 10-13, 27, 32, and 58 having been previously cancelled, Claims 1-9, 14-26, 28-31, 33-50 and 52-57 are currently pending.

Claim 50 was rejected under 35 U.S.C. 112, first paragraph, as having a scope not enabled by the Specification. Claim 50 has been significantly amended in a manner which Applicant believes obviates this rejection.

Claims 1-9 and 50-57 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1 and 50 have been amended, and Claim 51 has been cancelled, in a manner which Applicant believes obviates these rejections.

Claims 1-9, 14-18, 20-25, 28-30, 33-39 and 49-57 were rejected under 35 U.S.C. 102(b) as being anticipated by Grijpma et al. (U.S. Patent No. 5,672,367), Claims 1-9, 14-26, 28, 29, 33, 36-39 and 49-57 were rejected under 35 U.S.C. 102(b) as being anticipated by Li. (WO 00/19837), Claims 19, 26 and 31 were

rejected under 35 U.S.C. 103(a) as being unpatentable over Grijpma et al., Claims 40-48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Grijpma et al. in view of Zyck et al. (U.S. Patent Application Publication No. 2001/0021373 A1), Claim 19 was rejected under 35 U.S.C. 103(a) as being unpatentable over Li, Claims 30 and 31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Grijpma et al. and Claims 40-48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Zyck et al. Applicant respectfully asks that these rejections be reconsidered in view of the above Amendments and the below Remarks.

Anticipation Rejections

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). In the present case, both of Claims 1 and 50, as amended, require at least one element not found, either expressly or inherently, in the cited references. Specifically, both claims, as amended, require at least one biodegradable polymer having a molecular weight of at least 105000 g/mol (Mn).

In paragraph 20 of the outstanding Office Action, it is stated that:

> The burden falls to Applicant to show that the biodegradable polymers taught by Grijpma et al. for use in chewing gums do not fall within the number average molecular weight ranges and polydispersity ranges as claimed by Applicant.

A corresponding statement is made in paragraph 30 with respect to Li. Essentially, it seems as though it is believed that absent any convincing arguments or evidence to the contrary, one of ordinary skill in the art at the time the invention was made would have had the reasonable expectation that Mn of the polymers of Grijpma et al. or Li would be above 105,000 g/mol.

However, in examples 1-11 of Grijpma et al. a polymer is used, wherein the *viscosity* molecular weight (Mv) is given as being 42,200 g/mol. The skilled person will know, e.g. from page 53 of *Polymer Chemistry* (by Malcolm P. Stevens, Oxford University Press, 1999), that Mn is always equal to or less than Mv. Hence the sole polymer shown in Grijpma et al. definitely has a Mn value well below 105,000 g/mol.

As neither Grijpma et al. nor Li directly states anything about Mn-values, an indication on typical values of Mn can be found in e.g. Goldberg et al (WO 01/47368), previously cited by the Examiner in the present case.

Looking for values of Mn of biodegradable polymers, example 43 is a list of different biodegradable polymers manufactured in the previous examples. Of these the Mn values varies between 12,340 g/mol and 139,630 g/mol; however, of these 33 different polymers, only 2 are above 105,000 g/mol.

It is also noted that Goldberg et al. state to preferably use polymers of lower molecular weight (Mn) from about 10,000 to 90,000 g/mol, p.19 lines 19-20. Thus there is no reason for the skilled person to expect that Mn of any the biodegradable polymers of Grijpma et al. or Li are above 105,000 g/mol. Consequently, independent claims 1 and 50 are respectfully submitted to be not anticipatedl.

Obviousness Rejections

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1389 (2007). It can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. *Id.*

As noted by the examiner and previously stated, both Grijpma et al. and Li are silent as to the number average molecular weight used in their inventions. Furthermore, and consequently, no indication can be found on whether the use of certain molecular weights may have an effect not otherwise obtained.

Consequently, starting from either of these, it would in no way be obvious whether anything could be achieved by employing at least one biodegradable polymer having a molecular weight of at least 105000 g/mol (Mn). Essentially, until the Applicants made their contribution as claimed herein, Grijpma et al. and Li would not have recognized any reason to make the modifications to their formulations necessary to arrive at the claimed invention.

A number of advantages related to the use of the comparatively high molecular weight of the polymers included in the chewing gum of the present invention are mentioned in the description of the present invention, e.g. on page 2 line 9 to page 3 line 8 cited here below:

> *According to the invention, it has been realized that chewing gums made on the basis of biodegradable polymers are somewhat vulnerable to different conventional chewing gum additives or components. Most critically, it has been realized that softeners, which are highly needed when obtaining the desired chewing gum texture, tend to dissolve the chewing gums even when applied in small amounts.*

> *According to the invention, it has moreover been realized that this problem may be effectively dealt with by increasing of the molecular weight of at least one of the biodegradable polymers in the chewing gum when compared to conventional chewing gum polymers and thereby increasing the robustness of the chewing gum with respect to softeners, emulsifiers and e.g. flavor.*
>
> *According to the invention, it has moreover been realized that an increasing of the molecular weight of at least one of the biodegradable polymers and thereby an increasing of the rheological stiffness (G') may in fact be more than compensated by addition of softeners.*
>
> *In other words, according to the invention an improved texture of a biodegradable polymer containing chewing gum may in fact surprisingly be obtained by an initial worsening of the rheological properties of the biodegradable polymer and finally be more than compensated by the addition of suitable softeners.*
>
> *Due to the hydrophilic nature of biodedegradable polymers, the polymers tends to swallow water, e.g. from mouth induced saliva. Thereby, the intermolecular forces between the neighboring molecular chains will decrease and the chewing gum structure will weaken.*
>
> *According to the invention, a higher resistance to the decreasing of intermolecular forces has been obtained partly due to the fact that the resulting intermolecular forces are increased between the polymer chain and moreover due to the fact that the increasing of the size of the molecular chains results in increased entanglement between the polymer chains of neighboring polymers.*

The fact that the above advantages can be found according to the present invention by the employment of at least one biodegradable polymer having a molecular weight of at least 105000 g/mol (Mn) would not be found nor even indicated in either Grijpma et al. or Li.

Therefore the skilled person would not be led towards a chewing gum according to the provisions of amended claim 1. Hence above-mentioned amended claims 1 and 50 are non-obvious over cited prior art.

For the foregoing reasons, Applicant respectfully submits that all pending claims, namely Claims 1-9, 14-26, 28-31, 33-50 and 52-57, are patentable over the references of record, and earnestly solicits allowance of the same.

Respectfully submitted,

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